

Argument to the International Search Opinion
(Formal response to the written opinion of the
International Searching Authority)

TO: Examiner of the European Patent Office as an International
Preliminary Examining Authority

1. Identification of the International Application
PCT/JP2004/011184

2. Applicant

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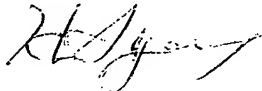
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4. Argument

In the Written Opinion of the International Searching Authority, the Examiner has pointed out the lack of patentability with regard to the subject matter of independent claims 1 and 10, and dependent claims 2, 3 and 6 in this application over cited reference D1 (EP1147937A). We, however, believe that the subject matter of independent claims 1 and 10, and dependent claims 2, 3 and 6 in this application is not at all explicitly or even implicitly described in the cited reference D1, as explained below. The invention in accordance with dependent claims 2, 3 and 6 has all the requirements and restrictions of independent claim 1. The discussion is accordingly focused on the invention in accordance with independent claim 1 and should naturally be recognized as argument against the Examiner's comments with regard to the invention in accordance with dependent claims 2, 3 and 6.

Independent claim 1 of this application regards a vehicle equipped with (A1) a voltage converter that converts a voltage of an accumulator into a desired form of voltage, (A2) a motor that receives a supply of electric power having the voltage converted by the voltage converter and outputs power to the drive shaft, (A3) a slip detection module that detects a slip due to spin of the drive wheels, and (A4) a controller that, in response to detection of a slip by the slip detection module, drives and controls the motor to restrict a torque output to the drive shaft with a view to converging the detected slip, and sets an initial torque for starting cancellation of the restriction of the torque output to the drive shaft, based on the restriction of the torque output, while driving and controlling the motor, in response to convergence of the detected slip, to apply the setting of the initial torque and thereby cancel the restriction of the torque output to the drive shaft. The cited reference D1 describes a 'motor MG2', which

corresponds to the '(A2) motor'. The cited reference D1, however, has no explicit or implicit description about the feature corresponding to the '(A1) voltage converter'. The '(A1) voltage converter' in this application converts a voltage of an accumulator into a desired form of voltage. Fig.1 in the cited reference D1 shows 'drive circuit' which supplies motor MG2 with electric current from the battery to drive the motor MG2. The 'drive circuit' in the cited reference D1, however, has no function that converts a voltage of a battery into a desired form of voltage. Accordingly, the 'drive circuit' in the cited reference D1 is obviously different from the '(A1) voltage converter' in this application. Also, the cited reference D1 describes 'angular acceleration determining section', which corresponds to the '(A3) slip detection module'. The cited reference D1, however, has no explicit or implicit description about the feature corresponding to the '(A4) controller'. The '(A4) controller' in this application sets an initial torque based on the restriction of the torque output to the drive shaft in response to detection of a slip due to spin of the drive wheels. The '(A4) controller' then applies the setting of the initial torque and thereby cancels the restriction of the torque output in response to convergence of the detected slip. A 'torque controller' in the cited reference D1, on the other hand, restricts the torque of the motor MG2 under a slip due to spin of the drive wheels and gradually relaxes the torque restrictions when a specific restriction relaxation condition is satisfied. Accordingly, the 'torque controller' in the cited reference D1 is different from the '(A4) controller' in this application in the procedure of canceling the torque restrictions. We thus believe that independent claim 1 of this application has sufficient patentability over the cited reference D1. As mentioned previously, the invention in accordance with dependent claims 2, 3 and 6 has all the requirements and restrictions of independent claim 1. Dependent claims 2, 3 and 6 accordingly have patentability over the cited reference D1.

The invention in accordance with claim 10 describes the invention in accordance with claim 1 in the form of another application, that is, a control method of a vehicle. We thus believe that claim 10 of this application also has patentability over the cited reference D1 for the same arguments as above.